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09/975,779	10/12/2001	Shih-Fu L. Lee	8033021/JAS	9567

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Moser, Patterson & Sheridan, LLP
Attn: James A. Sheridan
595 Shrewsbury Avenue
Suite 100
Shrewsbury, NJ 07702

EXAMINER

STOCK JR, GORDON J

ART UNIT	PAPER NUMBER
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2877

DATE MAILED: 12/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/975,779

Applicant(s)

LEE ET AL.

Examiner

Gordon J Stock

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 7-10, 13 and 16 is/are rejected.
- 7) ☒ Claim(s) 3-6, 11, 12, 14 and 15 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 October 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 20020305. 6) ☐ Other: .

DETAILED ACTION

Drawings and Specification

1. From Tian et al. (5,497,085), Figures 1,2, 3a, 3b, 4 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "54" in Fig. 3b has been used to designate both 54 and 55. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 32 of Fig. 2. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: 50, 52, accept or reject of Fig. 4. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
5. The drawings are objected to under 37 CFR 1.83(a) because they fail to show the direction of the light path direction and a reference sign for the track that the light impinges in

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Fig. 5a and the light path direction from 102 and 104 of 100 in Fig. 5b as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

6. Fig. 7b is objected to for the following informalities: lacking proper increments of curvature. Examiner suggests -1×10^{-7} or $-1 \text{ E } -07$ and so on to 7×10^{-7} .

7. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: “performed on an aluminum substrate prior to deposition of any of the recording layers” of **claim 4** lacks antecedent basis; “a radial profile of the disc and comparing each radial profile to one or more pre-established profiles” and establishing the utility of the disc in a disc drive having certain operating characteristics” of **claim 11** lacks antecedent basis; “the radial length of each moving average has less than the width of a slider to be used in a disc drive” of **claim 13** lacks antecedent basis; “using a plurality of points for the track around the circumference of the disc” of **claim 5** lacks antecedent basis; “the moving average is smaller than the width of head which is to be flown over the disc” of **claim 8** lacks antecedent basis.

Claim Objections

8. **Claim 1** is objected to for the following: “the slopes” of line 2, “the stored sets of points” of line 4; “the set of tracks” of line 5; “the plurality of radial lines” of line 7; “the derivatives” and “the radial line” of line 8; “the suitability” of line 9 lack antecedent basis. And “determining” of line 4 should read –determine--. Corrections required.

9. **Claim 2** is objected to for the following: “the profile” of lines 1 and 2 lacks antecedent basis. Correction is required.
10. **Claim 3** is objected to for the following: “the substrate” lacks antecedent basis. Examiner suggests replacing “the substrate of a magnetic disc” with “the substrate of the magnetic disc--”.
11. **Claim 4** is objected to for the following: “the recording layers” lack antecedent basis. Correction is required.
12. **Claim 5** is objected to for the following: “the step of determining the slope of each track” and “the same circumferential track” lacks antecedent basis. In addition, the phrase “around the circumference of the disc” is unclear, for a track of a disc would not exist on the perimeter of the disc. Correction is required.
13. **Claim 7** is objected to for the following: “the step of developing a moving average” and “the differentiation step” lacks antecedent basis. Correction is required.
14. **Claim 8** is objected to for the following: “the moving average” lacks antecedent basis. **Claim 8** is improperly dependent on itself. Corrections are required. Examiner will interpret this claim as depending from **claim 1**.
15. **Claim 10** is objected to for the following: “the desired characteristics” lacks antecedent basis. Correction is required.
16. **Claim 11** is objected to for the following: “the discs” of line 5; “the radius” of line 10 and “the radial data” of line 13 lack antecedent basis. Correction is required.
17. **Claim 14** is objected to for the following: “the data recorded” lacks antecedent basis. Correction is required.

18. **Claim 15** is objected to for the following: "the curvature profile of each disc substrate" lacks antecedent basis. Correction is required.

Claim Rejections - 35 USC § 101

19. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

20. **Claim 16** is rejected under 35 U.S.C. 101 based on the theory that **claim 16** is directed to neither a "process" nor a "machine," but rather embraces or overlaps two different statutory classes of invention set forth in U.S.C. 101 which is drafted so as to set forth the statutory classes of invention in the alternative only. *Id.* at 1551.

Claim Rejections - 35 USC § 112

21. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

22. **Claims 7-10, 13, and 16** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

23. **Claim 16** is rejected under 35 U.S.C. 112 second paragraph as being indefinite, for **claim 16** claims both an apparatus and the method steps for testing a magnetic disc. A single claim which claims both an apparatus and the method steps of using the apparatus is indefinite under 35 U.S.C. 112, second paragraph. *In Ex parte Lyell, 17 USPQ2d 1548 (Bd. Pat. App. & Inter. 1990).*

24. **Claim 7** has the phrase “to follow” that renders it indefinite, for it is unclear to as to which step the differentiation step follows in relation to the step of developing a moving average which lacks antecedent basis. Clarification is required.

25. **Claims 8 and 13** are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors. **Claims 9-10** are rejected for being dependent on **claim 8**.

Claim Rejections - 35 USC § 102

26. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

27. **Claim 16** is rejected under 35 U.S.C. 102(e) as being anticipated by **Meeks et al. (6,392,749)**.

As to **claim 16**, due to the rejection under 35 U.S.C. 101 and 112 second paragraph (see above) the Examiner will be treating the apparatus limitation, “comprising a profilometer,” for its merits. Therefore, Meeks in a profilometer for measuring surface height variation discloses a profilometer (Fig. 37).

Claim Rejections - 35 USC § 103

28. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

29. **Claims 1 and 2** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Meeks et al. (6,392,749)**.

As to **claims 1 and 2** Meeks discloses a profilometer and that stores data representing slopes of tracks along radii and determining the slope from the data from the optical signal; taking a radial moving average along a plurality of radial lines; building a curvature profile, height profile, and comparing said profile to a preestablished limit to determine the disc's suitability based upon the profiles, histograms and comparing the profile to a pre-established profile of an acceptable disc area; taking the average of the measured slope at the same circumferential track (col. 11, lines 20-55; col. 17, lines 25-35; col. 17, lines 55-65; col. 30, lines 15-60; col. 33, lines 55-67; col. 34, lines 1-55). As to the disc region where roll off is determined, Meeks is silent. However, he mentions testing film head flying and dragging (col. 14, lines 65-67) and mapping features that protrude above the mean fly-height of the head (col. 22, lines 5-7). Therefore, it would be obvious to one skilled in the art at the time the invention was made that a region where roll-off is determined, for the areas where features protrude above the fly height are mapped.

30. **Claim 8** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Meeks et al. (6,392,749)** in view of **Tian et al. (5,497,085)**.

As to **claim 8**, Meeks discloses everything as above (see **claim 1**). He is silent concerning the radial length being smaller than the width of a head. Tian in a method for determining an outer diameter rolloff discloses the width being less than the width of a head by

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being the distance between the head's railings (Figs. 3a and 3b). Therefore, it would be obvious to have the radial length be less than width of the head, for profile information is determined from a radial length that equals the distance between the railings of the optical head.

Allowable Subject Matter

31. **Claims 3, 4, 5, and 6** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and rewritten to overcome any objections or rejections under 35 U.S.C. second paragraph stated above.

Claims 11, 14, and 15 are objected to (see above). And **claim 12** is objected to as being dependent upon a objected base claim. **Claims 11, 12, 14, and 15** would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and rewritten to overcome any objections stated above.

Claims 7, 9, 10, and 13 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, and objections set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

As to **claim 3**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a method for testing a magnetic disc "testing is performed on the substrate of a magnetic disc," in combination with the rest of the limitations of **claim 3, 5, and 6**.

As to **claim 4**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a method for testing a magnetic disc "the method is performed on an aluminum substrate prior to deposition of any of the recording layers," in combination with the rest of the limitations of **claim 4**.

As to **claim 7**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a method for testing a magnetic disc “developing an average over a plurality of discs over a plurality of tracks sufficient in number to eliminate spikes from appearing in the differentiation step,” in combination with the rest of the limitations of **claim 7**.

As to **claim 9**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a method for testing a magnetic disc “assigning each disc to a group around a desired curvature profile, in combination with the rest of the limitations of **claims 9-10**.

As to **claim 11**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a method for testing a magnetic disc “wherein the radial length of each number of tracks is chosen to eliminate spikes from appearing in a differentiation step,” in combination with the rest of the limitations of **claims 11-15**.

Fax/Telephone Numbers

If the applicant wishes to send a fax dealing with either a proposed amendment or a discussion with a phone interview, then the fax should:

- 1) Contain either a statement “DRAFT” or “PROPOSED AMENDMENT” on the fax cover sheet; and
- 2) Should be unsigned by the attorney or agent.

This will ensure that it will not be entered into the case and will be forwarded to the examiner as quickly as possible.

Papers related to the application may be submitted to Group 2800 by Fax transmission. Papers should be faxed to Group 2800 via the PTO Fax machine located in Crystal Plaza 4. The form of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CP4 Fax Machine number is: (703) 872-9306

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gordon J. Stock whose telephone number is (703) 305-4787. The examiner can normally be reached on Monday-Friday, 10:00 a.m. - 6:30 p.m.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



gs

December 11, 2003



Zandra V. Smith

Primary Examiner

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